Organic carbon dynamic on soils: potentials for enhancement and loss

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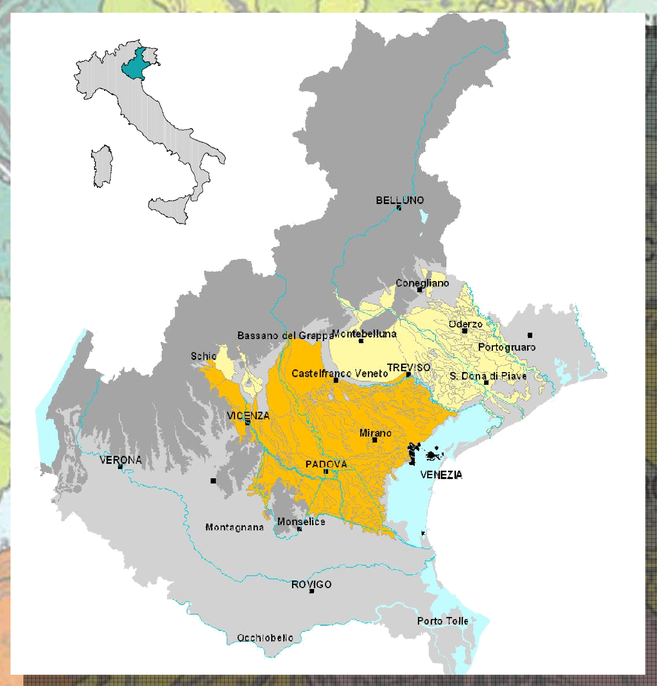
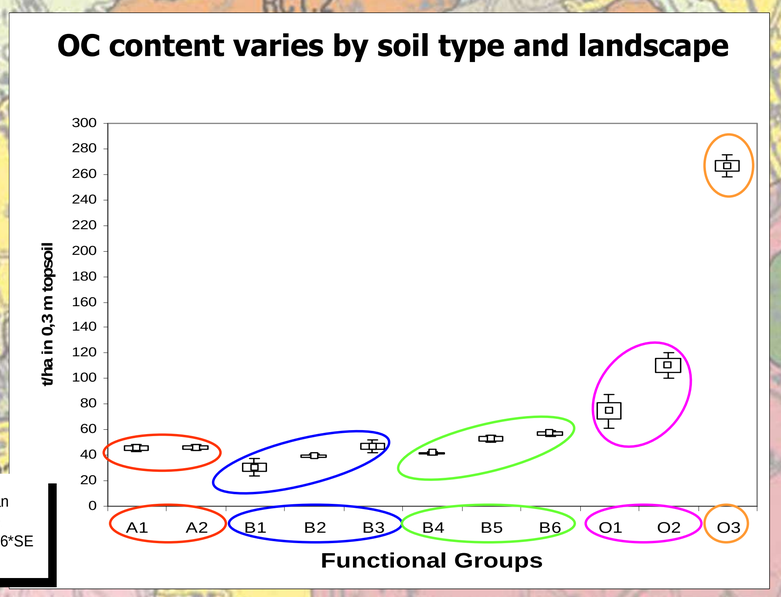


The study area is located in the **alluvial plain of Brenta and Piave rivers of Veneto Region**. The data set was collected from the regional soil database (project "Soil Map of Veneto Region at 1:250,000 scale") and consists in **1,700 soil profiles** on **1,200 km²**, mostly on agricultural land. Available information was analysed to point out significant relationships between soil OC content and environmental factors such as soil type, landscape and land use. To better highlight significant differences, data were grouped into 11 functional groups (FGs) specific for soil OC, on the basis of **surface texture**, **coarse fragments content**, **drainage** and **physiography.**



A1, A2: low and high content of coarse fragments

B1, B2, B3: excessively drained, somewhat excessively drained, well drained, from sandy to clayey soil

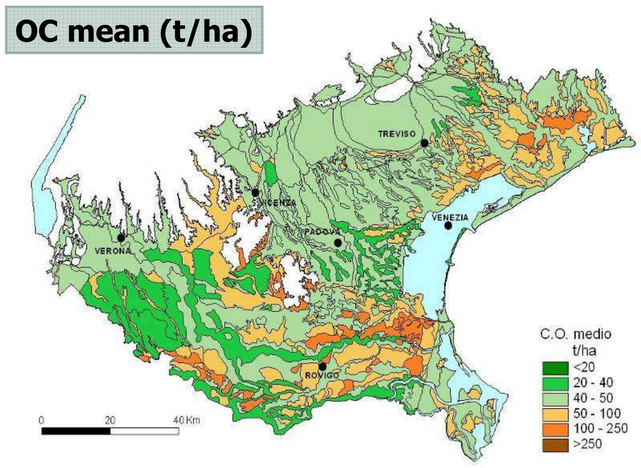
B4, B5, B6: moderately well drained, somewhat poorly drained, poorly drained, very poorly drained, from sandy to clayey soil

O1, O2: moderately well drained, somewhat poorly drained, poorly drained, very poorly drained, mollic horizon, all textures

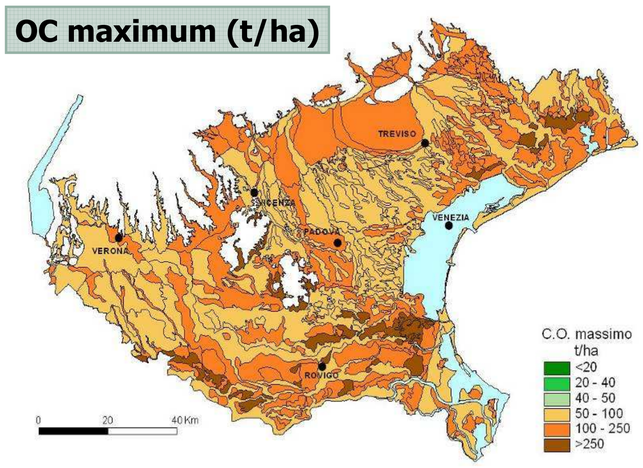
O3: somewhat poorly drained, poorly drained, very poorly drained, organic soil

For each Soil Map Unit (SMU) mean, minimum and maximum OC values and corresponding maps were worked out as weighted average of FG OC values of topsoil (0,3 m).

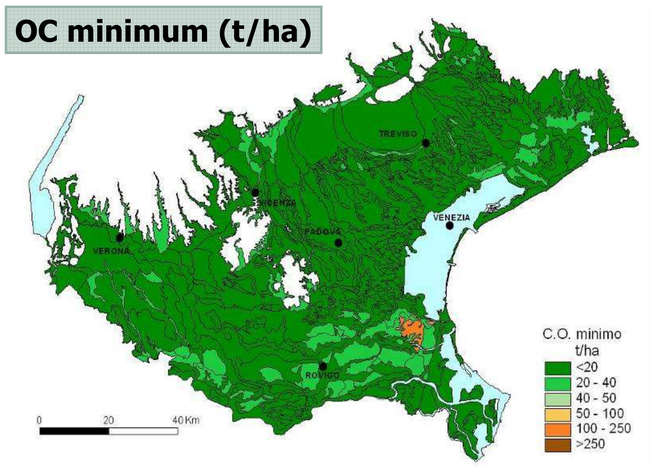
OC mean (t/ha)



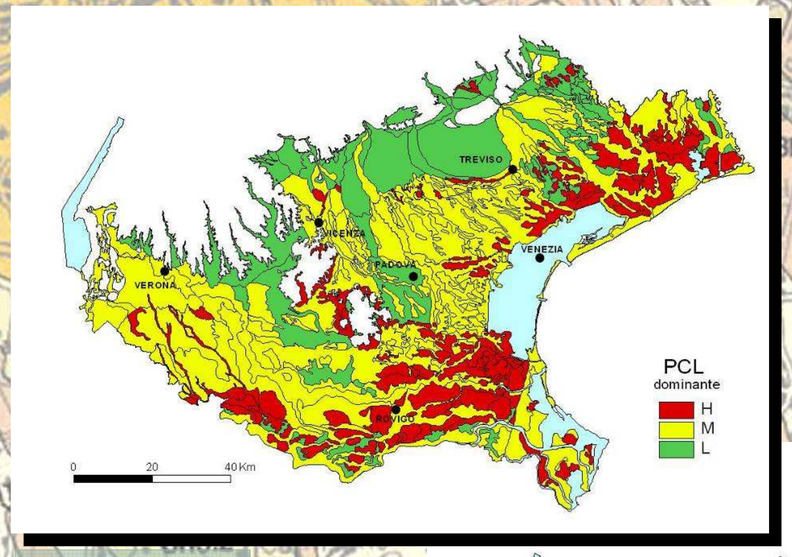
OC maximum (t/ha)



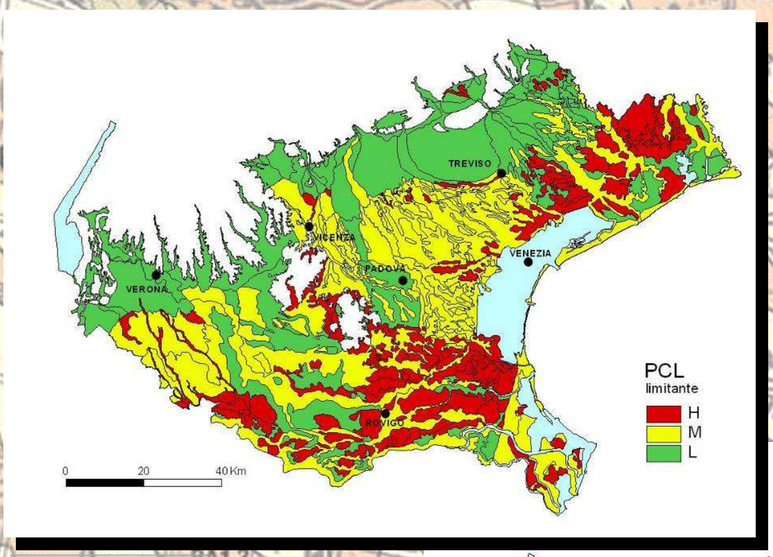
OC minimum (t/ha)



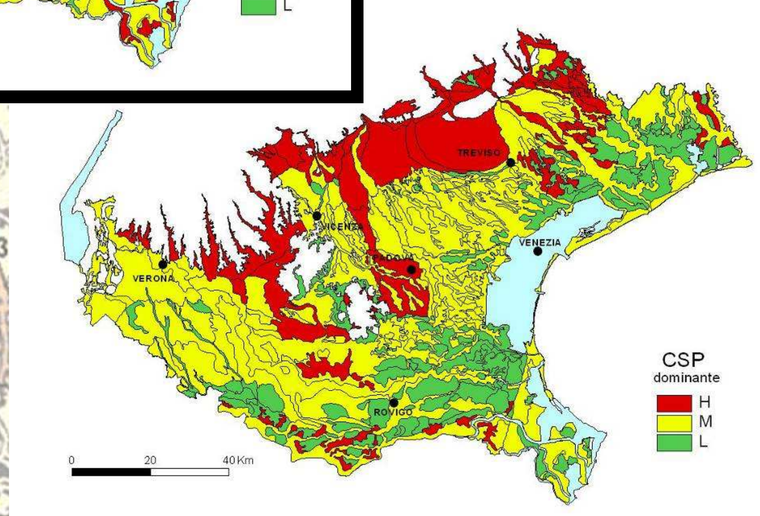
Following a procedure proposed at European Level (Stolbovoy, 2006), **Potential Carbon Loss** (**PCL**) and **Carbon Sequestration Potential** (**CSP**) were defined for each FG. To define the capability classes of PCL and CSP, the OC range of each FG was parted into three range of values (low, medium and high). The maps below represent respectevely the **classes of the dominant FG in SMU** (**dominant PCL and CSP**) and the **FG's classes that show a potential change in SOC stock** compared to minimum and maximum values (**limiting PCL and CSP**).



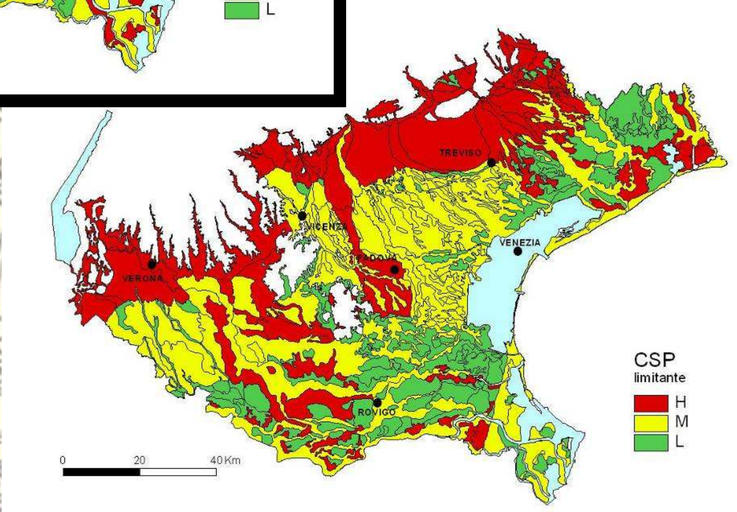
dominant PCL



limiting PCL



dominant CSP



limiting CSP

Congresso **La protezione del Suolo**
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